

The history and evolution of the ASCI: déjà vu all over again

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Valued colleagues, current and future Society members, and guests, thank you for the profound honor of serving as the 92nd President of the ASCI and for the privilege and challenge of delivering this address. However, I must confess that this moment realizes one of my greatest fears: suddenly waking up to find myself in front of an audience of colleagues I greatly admire and respect with absolutely no new data to present, in fact, no data at all. It is for this reason that I am starting with this slide of the blood coagulation system, just to make me feel a little more comfortable. Though I promise not to talk to you about inherited bleeding disorders, I am humbled that there are few other subjects for which I possess any unique knowledge, insight, or expertise on which to base this address. My sense of inadequacy was only heightened by the ritual that I learned is performed annually by every ASCI President – that of reading the addresses of our predecessors. Finding so many of these addresses to be exceptionally clever or remarkably insightful left me feeling even more intimidated. However, reviewing these and other ASCI historical records also filled me with a rich sense of tradition and a professional and personal connection to this Society that I would like to share briefly with you.

Dr. Eugene A. Stead, Jr., the 45th President of the ASCI, was born in 1908, the year the ASCI was founded, and presided over the 1953 meeting, shortly after I was born. Dr. Stead was an emeritus professor and already a legendary figure at Duke when I was a medical student in the late 1970s. I still vividly recall the many quotations from Dr. Stead that were posted around the student lab with almost religious reverence. One of my favorites – “If you can’t get all of your work done in 24 hours, then you will

just have to stay up late” – captures the ethos of the time and certainly has a ring of irony in the era of house staff contracts and strict work-hour rules.

The President of the ASCI during my first year of medical school in 1975 was Gene Braunwald, a towering figure in American medicine under whom I served as a house officer at the Peter Bent Brigham Hospital, along with many other members of this Society. I was recruited to Michigan by Bill Kelley in 1985, the year after he served as President of the ASCI, and still recall meeting him and shaking his hand that year at my first Tri-Society Meeting.

Reviewing the Presidential Address from 1986 gave me particular pause for reflection. Joe Goldstein served as the 78th President of the ASCI. I still vividly remember his inspiring and entertaining address to this Society, which is often quoted for its insightful examination of the issue of basic scientific training for the physician. The common deficiency of such training results in the disease that Joe referred to as PAIDS, or the paralyzed academic investigator disease syndrome. Mike Brown and Joe Goldstein have been personal heroes and idols for me since I began my training and represent the quintessential model toward which my whole generation of physician scientists aspire. I am thus particularly delighted that Mike and Joe were the recipients of the 2002 Kober Award earlier this morning. I still vividly remember Joe Goldstein tracking me down to find out the details about the abstract I had submitted with Stu Orkin to the 1985 ASCI meeting, to find out how much progress we had made in the meantime. He missed me in the lab, but when I got home I was incredulous to learn from my wife that a Dr. Joe Goldstein, *the* Dr. Joe Goldstein, had called, regarding something to do

with the upcoming ASCI meeting. By the way, my scientific mentor and coauthor for that abstract, Stu Orkin, served as ASCI President in 1990, the year that I was elected to membership.

My rough survey of the subjects for all 56 of the presidential addresses available to me between the years of 1939 and 2001 is shown here (Figure 1). I am going to focus on the two most historically popular issues: first, just what is clinical investigation and who is a clinical investigator, and second, what is the prognosis for the future of academic medicine and the physician scientist? I will warn you in advance that many of the conclusions I am going to present would be branded by a critical reviewer as “predictable,” “obvious,” and “largely repetitive of previous work in the field” (Figure 2). For what I learned was that history does indeed repeat itself, the more things change the more they do stay the same, and history is a good teacher.

Some of the ASCI members in my generation may recall the Peabody and Sherman cartoon from the Rocky and Bullwinkle Show. The dog, Peabody, would instruct his boy, Sherman, to configure their time machine for a particular point of interest in history. In that spirit, let’s set the “wayback machine” for May of 1908 at the Willard Hotel in Washington, D.C., for the Charter Meeting of the ASCI.

The criteria for ASCI membership, as outlined in the Charter, are: “Any practicing physician residing in the United States or Canada who has accomplished a meritorious, original investigation in the clinical allied sciences of medicine is eligible to membership.” (1) Although never spelled out in more detail, there was apparently considerable debate about exactly what constituted a “practicing physician.” This balance between clinical medicine and basic laboratory research has been a

**ASCI Presidential Addresses
(1939–2001)**

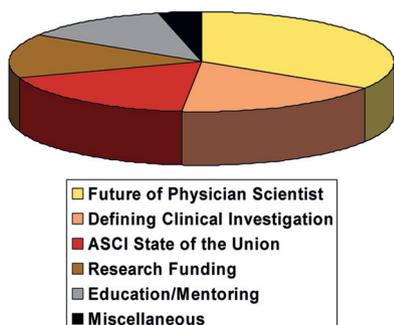


Figure 1

recurring theme throughout our Society's history.

In his address as the first ASCI President in 1909, Samuel Meltzer made a case for the importance of basic scientific training of the clinical investigator. His words were sound advice for the young physician scientists of 1909, as well as for the victims of PAIDs in 1986, and I would assert that they still are today. "They must not only be informed and trained in the other sciences of medicine," Meltzer said, "but must have carried on various investigations in one or more of these pure sciences so as to become familiar with careful scientific method and imbued with a scientific spirit; they will learn to avoid bias in the search, to apply criticism to the findings; they will learn not to trust only a few facts, not to rejoice prematurely over findings, and not to be disheartened by failures. They will thus acquire the habits and the tastes of the investigator, the scientist, which may then stick to them for life" (1). Holly Smith elegantly voiced the same concept in 1970 when he said, "Science is necessary for the physician if his intellectual epiphyses are to remain open" (2).

Striking another familiar theme, Samuel Meltzer further mused that the leading clinicians of his generation did not compare favorably with their predecessors. He speculated that a primary cause of this decline was "the loss to clinical medicine of the brainy men who now devote their energies to the pure science of medicine." (1) However, he also advised the clinical investigator to "beware of practice. It is a bewitching graveyard in which many a brain has been buried alive with no other compensation than a gilded tomb-

stone" (1). Many others have voiced similar concerns over the years.

Fuller Albright described the split personality of the ASCI member of 1944 as "one trying to ride two horses – attempting to be an investigator and a clinician at one and the same time . . . this rider of two horses, however, must remember that there are two horses; he must avoid the danger on one side that he, as a clinician, be swamped with patients and the equal danger on the other side that he, as an investigator, be segregated entirely from the bedside" (3). Isaac Starr captured a similar sentiment, characterizing physician scientists of 1940 as those "considered to be clinicians by physiologists, biochemists, and immunologists; and considered to be physiologists, biochemists, or immunologists by most clinicians" (4).

This precarious balance between physician and scientist, defining just what we mean by the words clinical investigation, has also been a recurring and contentious issue for the selection of new ASCI members (1). Francis Blake, President in 1931, focused on the meaning of the phrase in the Society's constitution, "by the methods of the natural sciences." There was concern that the Council was focusing too much on direct experimentation as opposed to clinical observation and that this group of more basic laboratory investigators had undue influence in the selection of members. To quote John Paul in 1938, "Of late years, conservative opinion does not allow anything to be really considered as etiology unless we can succeed in getting it into a test tube, unless we can precipitate it – unless we can crystallize it, as it were. This is due, of course, to our current methodology, which has, perhaps, become more of a religion than most of us realize. I think it may have led to a slightly narrow interpretation of clinical investigation on our part, for clinical investigation must be given the opportunity to spread itself up into philosophy, if it will, as well as down into the basic sciences" (1). Similarly, listen to this familiar refrain spoken by another ASCI President: "From some quarters one hears that the content of our program and that of our journal is investigational, but bears only a slight resemblance to anything clinical" (5). Those same words could just as easily

be heard today as when Eugene Ferris said them in 1951.

How have our criteria for membership selection changed over the years? This graph (Figure 3) shows the number of members nominated and elected to the ASCI from 1930–1954 on the left, with the figures for the last two decades on the right. It is evident from the data shown here that the level of the bar, at least in terms of the overall percentage of nominees elected, has remained relatively constant over the period shown here, ranging from a low of under 20% in the early 1980s to a high of 45% in the early 1930s. The approximately 30% for 2002 is very close to the average over the entire period. Nonetheless, the criteria used for the selection of new ASCI members and the height at which the bar for membership is set have continued to be highly contentious issues since the inception of this Society.

In 1957, Stanley Bradley noted that "Criticism of the Society is especially acrid in connection with the choice of new members" (6). He went on to reassure the Society that in his eight years on Council, he had seen nothing other than merit used in these selections. John Merrill wrote in 1963, ". . . having lost some sleep over these matters with the Council, I am convinced that this body does perform as conscientious, as thorough, and as effective a job as is possible under the circumstances. It is interesting to note, however, the opinions of occasional sponsors and proponents who have expressed their unshakable prediction that the whole rotten structure of this Society will collapse like the battered caravanserai of Omar the tentmaker unless it is shored up by the strength of their candidates" (7).

Perhaps even more contentious than where to set the bar has been the question of what type of bar to use. We continue to wrestle with the divide between basic science and the practice of clinical medicine and how best to bridge this gap, just as the founders of

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Referee A Comments for Authors:

This work is entirely predictable, painfully obvious, and largely repetitive of previous work in the field.

Figure 2

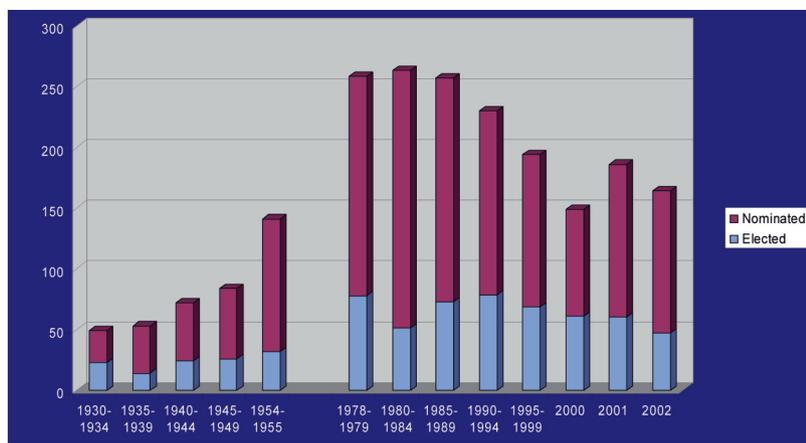


Figure 3

the Society did early in the last century. Indeed, I believe it is this very struggle that in large part defines us.

What constitutes clinical investigation: how much should we emphasize the clinical and how much the investigation? I particularly remember a heated debate over membership selection when I was first on the Council as Secretary-Treasurer in 1994. The candidate we were discussing is now a highly successful and widely recognized leader in academic medicine and a valued member of our Society. The discussion quickly moved from the quality of the work, of which there was no question — he was clearly one of the leaders in the field of the history of medicine and a wonderful scholar whose academic credentials clearly exceeded our high bar. Nonetheless, the debate turned to whether history was science. We poured over the bylaws, the definition of the criteria for membership, and after considerable discussion, sharply divided, the Council voted its conscience. That year, at least, history was not science. Undaunted, as every initially unsuccessful ASCI candidate should be, this colleague was renominated the subsequent year, his scholarship was immediately recognized, and he was promptly elected to membership with minimal discussion.

This heated debate continues to plague the Council as it has for all 92 years of our existence: exactly what is science? How do we weigh out the scientific and medical value of a candidate and how do we add up the two? I am reminded of a similar debate in the sports world, conducted in their equivalent of the JCI — *Sports Illustrated*. A

feature in most issues queries leading premiere athletes, the sports world equivalent of ASCI members, about a particular event as to whether it is “sport or not a sport.” Each of the approximately 200 new member applications to the ASCI each year poses a similar dilemma for the Council. Outcomes research: sport or not a sport? Clinical trials: sport or not a sport? Medical ethics and health economics: sports or not sports? What should be our definition of what is physician scientist sport and what is not?

I would like to offer this suggestion to future Councils. Always remember our history and tradition and keep the bar for membership high. However, don’t become too distracted by concerns of whether a candidate is a sufficient practitioner of medicine, as in the early days of our Society, or a molecular enough scientist, as in more recent times. Instead, I propose that our Society broadly embrace all scholarly and academic pursuits of physicians that relate to the practice of medicine. Our new members should first and foremost be the top scholars and future leaders in their field. They should be contributing to knowledge and shaping the view and practice of medicine. The quality of the work should be paramount, not its specific topic or how fashionable it is at the time. French and Canadian judges should all agree and, when necessary, we can always give out two gold medals.

As my final historic notes, I’d like to call attention to two other recurring themes through much of our history. First, many have perceived a grave threat to academic medicine and the very survival of the physician scientist. This was

particularly acute during the funding crisis of the early 1970s. “Academic medicine is in trouble and we all know it.” “The time for reflection has passed.” “We must make certain that there will be clinical investigators in the year 2000.” “Our future is threatened: can we divert it from its present course?”

However, at the same time I am struck by the excitement and common vision of nearly all of my predecessors for the remarkable potential of clinical investigation and the unique opportunities available to the physician scientists of their time. I certainly share their enthusiasm and am sure that there are few in this audience who would disagree with the view that we too are poised at the beginning of a unique era, one in which the physician scientist will be particularly critical to ensure the translation of the bewildering pace of basic research findings into clinical medicine.

I was particularly struck by the comments of Irving London in his Presidential Address in 1964, well before what most of us would consider the modern molecular genetic era. The genetic code had not yet been fully deciphered, and the double helix was a relatively recent and exciting finding. Nonetheless, let me read to you what Dr. London had to say: “In the past 15 years, we have savored the recognition of numerous new diseases; we have witnessed the extraordinary growth of human genetics; our understanding of all branches of internal medicine has been greatly enhanced, and there have been monumental achievements in pharmacotherapy and surgical treatment.” He went on to note that “The science of human genetics, which has grown so rapidly in the past two decades, has already revealed an enormous number of human hereditary disorders, and the number appears to increase with every passing day” (8). As an aside, it is interesting to note that back in 1964, Dr. London estimated that there were approximately 40,000 human genes. This number was raised by more modern science to approximately 100,000. However, with the completion of the human genome sequence just last year, Dr. London was found to be correct after all, with the current human gene count much closer to his original 40,000 estimate.

So as Sherman sets the wayback machine for 2002 and we return to our

current time, what can we conclude? Before I summarize my thoughts, I must provide something of a disclaimer. Though I think that my perception of the ASCI state of the union, the fate of the physician scientist, and the status of the world in general is extraordinarily accurate, I must confess that my closest friends and colleagues frequently accuse me of being incurably optimistic. Indeed, Steve Weiss, under whom I served in his role as *JCI* editor, frequently exclaimed to me in frustration as we discussed one dire journal problem or another, “You’re always trying to convince me that the glass is one-sixteenth full.”

This disclaimer aside, I assert to you today that our Society and our meeting is alive and well and serving very much the same function it has for nearly all of the past 92 years and very much as our founding fathers initially intended. I would argue that the function of the physician scientist over the years, as reflected in the history of our Society, is an evolutionary process of genetic selection, mutation, and survival of the fittest. Balancing the training and practice of clinical medicine with basic laboratory research is formidable and not for everyone. Yet the rewards of this career are unparalleled and well worth the price, even if, as Gene

Stead advised my class of medical students a number of years ago, “you have to stay up late.” As in any other ecologic system, when prey in the form of grants is amply available, our numbers expand. When grants become scarce, only the fittest, the best and brightest, survive and persist. As the environment changes, we gradually evolve and adapt to the new conditions. Fortunately, the physician scientist is a robust and diverse species, and I am confident that we will adapt and adjust to thrive in whatever environment should emerge in the rest of this century.

Indeed, as the practice of medicine gradually becomes more heavily automated and computerized and the arts of the physical exam and diagnosis are replaced by high technology and artificial intelligence, the practicing physician of the future may begin to look very different from how he or she looked in 1908. There may cease to be a need in the trenches for highly trained clinicians with an extensive knowledge of biochemistry and genetics. In this brave new world, the physician scientist, led by the members of the ASCI and AAP, may become more important than ever. For it is our very members who will be needed to program the computers, create the new algorithms, translate basic laboratory discoveries, and to literally

write and rewrite the book on how modern medicine should be practiced. To paraphrase Mark Twain, the rumors of our death may have been greatly exaggerated. The physician scientist is not dead or dying and our glory was not left far behind us in Atlantic City. Instead, the golden age of the physician scientist is just about to begin.

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